

Title (en)

Level conversion circuit and semiconductor integrated circuit employing the same

Title (de)

Regelwandlerschaltung und deren Verwendung in einem Halbleiter-IC

Title (fr)

Circuit convertisseur des niveaux et circuit intégré à semiconducteurs utilisant ledit convertisseur

Publication

**EP 0926830 A3 20010411 (EN)**

Application

**EP 98123775 A 19981214**

Priority

JP 35927397 A 19971226

Abstract (en)

[origin: EP0926830A2] In a level conversion circuit mounted in an integrated circuit device using a plurality of high- and low-voltage power supplies, the input to the differential inputs are provided. In a level-down circuit, MOS transistors that are not supplied with 3.3 V between the gate and drain and between the gate and source use a thin oxide layer. In a level-up circuit, a logic operation function is provided. <IMAGE> <IMAGE>

IPC 1-7

**H03K 19/0185**

IPC 8 full level

**H01L 21/8234** (2006.01); **H01L 27/088** (2006.01); **H03K 3/356** (2006.01); **H03K 19/0175** (2006.01); **H03K 19/0185** (2006.01)

CPC (source: EP KR US)

**H03K 3/356104** (2013.01 - EP US); **H03K 3/356113** (2013.01 - EP KR US); **H03K 19/0185** (2013.01 - KR); **H01L 2924/0002** (2013.01 - EP US); **H03K 19/0013** (2013.01 - KR)

Citation (search report)

- [XA] US 5635859 A 19970603 - YOKOTA NOBORU [JP], et al
- [A] US 5410266 A 19950425 - MANLEY ROBERT B [US]
- [A] US 5329182 A 19940712 - YU RUEY J [US]
- [A] US 4939478 A 19900703 - HEIMSCH WOLFGANG [DE], et al

Cited by

DE10320795A1; EP1102402A1; EP3732789A4; US6930622B2; WO0131791A1; WO2017136123A1; US6459322B1; US6593795B2

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DOCDB simple family (application)

**EP 98123775 A 19981214**; CN 200410088158 A 19981225; CN 200610095799 A 19981225; CN 200610100202 A 19981225; CN 200610100205 A 19981225; CN 98126344 A 19981225; DE 69839067 T 19981214; JP 35927397 A 19971226; KR 19980058939 A 19981226; KR 20060058138 A 20060627; MY PI9805762 A 19981219; SG 1998005891 A 19981222; TW 87120948 A 19981216; US 12217802 A 20020416; US 16940808 A 20080708; US 201113095480 A 20110427; US 201213406715 A 20120228; US 20975598 A 19981211; US 30384102 A 20021126; US 4123205 A 20050125; US 48469006 A 20060712; US 64728003 A 20030826; US 83362701 A 20010413